

## MATERIA MEDICA AND PHARMACY.

7. *On the Cod-liver Oils of Commerce—and on the Beneficial Effects of the cheaper Fish Oils.*—At the meeting of the Surgical Society of Ireland, Feb. 23d, Dr. BAGOT drew attention to some of the oils sold as cod-liver oil, many such being found in commerce, which Dr. B. believes do not contain a drop of the *oleum jecoris aselli*. Dr. B. was induced to bring this subject before the society from a feeling that much credit is given to cod-liver oil for effects which may be equally well produced by some of the cheaper oils, and this becomes a matter of much importance to hospital and dispensary physicians, whose practice in this remedy must be much limited from the high price of the genuine article. "The wonderful powers of this extraordinary medicine are now so well known," Dr. B. observed, "that I will not dwell on them, but may be excused from referring to the very instructive and scientific paper with which my friend Dr. Benson favoured the society a short time since [see preceding number of this journal, p. 485], in which the curious fact was for the first time laid before the profession, that as the patient under the use of this oil becomes fat, just in the same ratio does his vital capacity decrease. His paper was of that deep practical importance which ever characterizes his communications, and I trust the learned gentleman will continue his researches relative to this interesting fact, keeping in mind the inquiry in how far, or whether, this might be remedied by the continued use of tartar emetic.

"Allow me to call your attention to the oils on the table; I have been kindly supplied with those two specimens of pure cod-liver oil by the Apothecaries' Hall, and Messrs. Bewley and Evans. I brought them that the society might have an opportunity of contrasting them with the other oils which may be, or are, sold as cod-liver oil. The specimen marked 'Cod Oil' was purchased in London under the name of cod-liver oil, but from the price paid for the article, it is impossible that it can be genuine. However, it produces the effect required by the physician—viz., fattening and strengthening his patient, and it matters little under what name it be administered, if it have a beneficial action. On carefully comparing it with this specimen of genuine 'Train Oil,' purchased at Boileaus', they seem to be identical in taste and smell, and what is remarkable, both give a violet colour with sulphuric acid, which many suppose to be a test for cod-liver oil. I am inclined to believe that there is much of this train oil sold, at a high price, labelled '*Oleum Jecoris Aselli*;' that the effects are equally wonderful, I have already proved to my own satisfaction, and any medical man may demonstrate the same by administering it to his patients.

"To illustrate the benefit to be derived from this cheap oil, I will, from among many, mention one case. Mr. W., a clerk in the employment of a wine merchant, became affected with phthisis. When I first saw him, in August, 1849, he had disease of the apex of the left lung, which had run into abscess of considerable size. He was much reduced in flesh and strength, having profuse perspirations, occasional diarrhoea, harassing cough, &c. &c. He commenced by taking small quantities of this 'cod oil,' gradually increasing the dose to half an ounce three times a-day. The following table will show his increase in weight up to the present date:—

August 31, 1849, he weighed	.	.	.	8st. 4 lbs.
September 18,	.	.	.	8st. 6 lbs.
October 18,	.	.	.	8st. 12 lbs.
November 18,	.	.	.	9st. 1 lb.
December 18,	.	.	.	8st. 11 lbs.
January 18, 1850,	.	.	.	9st. 0 lb.
February 18,	.	.	.	9st. 1 lb.

"The first administration of the oil was attended with a restoration of appetite and general amelioration of his symptoms almost marvellous. This case will serve to exemplify the beneficial effects of this oil, which can be purchased at the low price of 3s. per gallon. This young man was able to resume business a very short time subsequent to his commencing the oil. I have another

case of a young lady with diseased lung, who has been taking it since the 12th of February, 1849, on whom it has had the same extraordinary effect. She is fat and strong, able to walk eight or ten miles, although a year since she was confined to bed for a fortnight from the debility of phthisis. She was seen at that time by Sir Henry Marsh, who agreed with me as to the existence of disease of her lung.

"One word as to the best mode of administering cod-liver oil. I consider the infusion of cloves to be by far the best vehicle; for besides being a stomachic, and acting as a gentle stimulant, it so disguises the smell and taste of the medicine that it is quite possible to give it to a squeamish patient, without informing him of what the dose is composed of; and that sometimes becomes a matter of importance, especially with ladies who have delicate stomachs. It should also at first be given in small doses, half an hour before the patient rises in the morning, and after he goes to bed at night.

"I trust this communication may help to clear up the question which has been started—viz., whether other fish oils may not have the same beneficial effect as the cod-liver oil? From the cases which have come under my notice, I feel quite certain that they are equally useful in the treatment of phthisis, and if this prove to be true, I need not tell the society how invaluable will be the discovery to those in poor circumstances.

"I have also laid on the table specimens of sperm and whale oils, to show that they could not be substituted for cod-liver oil, both from their smell and taste.

"Neither do they afford the violet colour with sulphuric acid. Whether these oils, procured from the mammalia, have the same fattening powers which the fish oils possess, I believe has not been yet ascertained."

Dr. STAPLETON was of opinion that whenever pure cod-liver oil could be had, they ought to use it, and for this reason—namely, that the liver of the cod had been found peculiarly efficacious in the treatment of rheumatic affections amongst the Norwegian fishermen. It was tolerably well known that in Norway it was not used as oil alone, but was taken in the liver itself. The latter was extracted from the fish, was put into the stomach which was removed from the cod for the purpose, and some salt and pepper being added, the stomach was filled up with water, and tied at one end. The whole was then boiled, and the liver thus prepared being used as an article of diet, was found highly beneficial in the treatment of rheumatism. But there was another point bearing on this important subject which deserved their attention. It was, that there was only one period of the season at which the liver of the cod yielded the oil in a state of purity—namely, just in the beginning of the season when the liver was of a light cream colour. As the season drew towards its close, the liver gradually acquired a reddish hue, and when such was the case, scarcely any oil could be obtained, even from a large number of them; but in the commencement, it contained an abundance of oil of a superior quality. In the beginning of the season it was obtained by "cold expression," but towards the close, it could only be procured by boiling the livers, in which case, the product was exceedingly thick, had a most disagreeable odour, and would not sit so easily upon the stomach as the oil procured by cold expression in the early part of the season. He did not deem it necessary to go further into the history of cod-liver oil, but he might mention that an oil much superior to that obtained from the common cod was procured from the liver of another gadus—namely, the Torsk, and which was pretty extensively employed in rheumatism, and was thought to act more beneficially in that disease than the genuine cod oil.—*Dublin Medical Press*, March 6th, 1850.

8. *Almond Oil as a substitute for Cod-Liver Oil.*—Dr. P. M. DUNCAN, Physician to the Essex and Colchester Hospital, and Mr. R. S. NUNN, Surgeon to the same institution, have communicated to the *Provincial Medical and Surgical Journal* for March 20, the following remarks on the applicability of the common sweet almond oil to all cases for which cod-liver oil is prescribed.

"In a flat and damp agricultural district, where, amongst a certain class, intermarriage is very frequent; where intermittent fevers, scrofula, and all kinds of disease characterized by the presence of an adventitious product in the system,

are very common, and where, on account of scanty food and clothing, diseases are generally of an adynamic type, it is not to be wondered at that medicines which enhance the nutritive powers should be very largely prescribed.

"We have always subscribed to that opinion which denies the specific agency of the oleum jecoris aselli in tuberculous and like diseases, and attributes the benefit conferred to its influence on the assimilative processes. We have prescribed the cod-liver oil with great success, both in hospital and in general practice, and consider that its only drawbacks are its nauseous flavor and high price. In June last, we agreed to prescribe a vegetable oil instead of the oleum jecoris; and our experience is highly favorable to the therapeutical virtues of the oleum amygdalæ. We have reason to declare that the almond oil and the cod-liver oil act precisely in the same manner; and the first mentioned oil has anything but a disagreeable taste, and can be obtained for at least one-third of the price of the best cod-liver oil. Our experience of the beneficial effects of almond oil has been derived from upwards of two hundred and fifty well-observed cases; in no one case has it purged, and the contrary effect is very frequently produced. We are in the habit of prescribing the oil without any adjunct, at first in one-drachm doses, half an hour after every meal. The dose is gradually increased. A drop of eau-de-cologne, or of some essential oil, renders the 'neat' oil anything but disagreeable to the taste. It is an excellent vehicle for the exhibition of iodine in small doses, the latter being rubbed down with a small quantity of olive oil, and then added to a larger amount of almond oil. The following formula has been of great use in several cases of syphilitic diseases of the bones and skin, in broken-down constitutions, in chronic pleurisy, and in many cases of chronic enlargement of the glands of the neck:—*R. Olei amygdalæ 3ss; olei olivæ 3ij; iodinii gr. ½. M.* A third part to be taken three times a day.

"The influence of half an ounce of this oil of almonds, taken daily, upon the weight of some patients progressing in health under its exhibition, is very remarkable. In one case, there was a weekly increase of two pounds, and in another, of four pounds. Care must be taken to attend to the biliary secretion during the exhibition of the oil, which is contraindicated when there are evidences of local congestion, or of inflammation."

9. *Citrate of Iron and Magnesia.*—The citrate of iron and magnesia appears, to M. VAN DER CORPUT, likely to come into general use among ferruginous preparations, being easy of administration, and not liable to produce constipation. It is prepared by dissolving two parts, by weight, of recently precipitated hydrated oxide of iron in a solution of three parts of citric acid; the liquor is then saturated with carbonate of magnesia, and evaporated to dryness. The salt is in the form of shining brown scales: the taste is sweetish, very slightly inky, and not at all disagreeable. It is perfectly soluble in water: it is not deliquescent, so that it may be given in the form of powder. It may be prescribed in doses of 15, 30, or 60 centigrammes ( $2\frac{1}{2}$ , 5, or 10 grains).

*Syrup of Citrate of Iron and Magnesia* is prepared by dissolving 8 grammes in 15 grammes of orange-flower water, with 180 grammes of simple syrup. This is one of the most agreeable preparations of iron.

#### *Saccharine Confection of Citrate of Iron and Magnesia.*

Take of citrate of iron and magnesia . . . . .	1 drachm
Powdered sugar . . . . .	$7\frac{1}{2}$ drachms
Powder of canella . . . . .	1 drachm

Mix, and divide into powders, each containing twelve grains.

#### *Lozenges of Citrate of Iron and Magnesia.*

Take of citrate of iron and magnesia . . . . .	$\frac{1}{2}$ drachm
Powdered sugar . . . . .	$7\frac{1}{2}$ drachms
Saccharine confection of vanilla . . . . .	$\frac{1}{2}$ drachm
Mucilage of tragacanth, a sufficient quantity.	

Mix, and divide into lozenges of twelve grains.—*London Journal of Medicine*, April, 1850, from *Journal des Connaissances Médico-Chirurgicales*, March, 1850.

10. *Alkali obtained from the Khaya Senegalensis (Swietenia Senegalensis) a cheap substitute for Quinine.*—M. CAVENTOU has obtained an alkali from the above-named tree, which he thus describes: It is non-crystalline, solid, opaque, of resinous aspect, yellow, very bitter, slightly aromatic, and easily soluble in water. If this salt possess the powerful anti-periodic properties of the bark from which it is derived, it must become a valuable article of the *materia medica*, as the price of quinine (from the alleged scarcity of the cinchona bark) is becoming dearer every year. According to M. Servant, the inhabitants of Senegal cure the worst cases of intermittent fever by a watery decoction of the bark of the khaya.—*London Journal of Medicine*, April, 1850, from *Journal de Pharmacie et de Chimie*, November, 1849.

11. *Physiological Effects of Oil of Turpentine.*—Dr. THOMAS SMITH, in an interesting article on the Therapeutic Uses of Terebinthinate Medicines, in the *London Journal of Medicine* (April, 1850), gives the following account of the physiological action of turpentine.

"Turpentine, when taken internally, exerts a peculiar action on the mucous surfaces, and the tissues superimposed upon them: it increases the peristaltic motion of the bowels, inducing purgation, and, in very large doses, hypercatharsis; it promotes the flow of urine, impregnating it with a violet odour; and, if its action be specially directed to the kidneys, may produce strangury and bloody micturition. It determines to the skin, producing copious and free diaphoresis, sometimes attended with an itchy eruption. It also taints the pulmonary exhalation with its characteristic smell. A large dose has been taken internally, and failed to produce action of the bowels or kidneys; the vapour of the turpentine has then been discharged through the skin and pulmonary organs; this was the case with the experiment that Dr. Copland instituted upon himself. I once gave half an ounce to a boy of sixteen years of age, which occasioned no other unpleasant symptoms than an increase of the respiratory movements, and acceleration of the circulation, with a tendency to somnolency, followed by a profuse discharge from the urinary organs. The breath and perspiration were tainted with a turpentine odour for upwards of a week; the bowels remained inactive until he had taken eight ounces of the compound infusion of senna, with ten grains of calomel; the evacuations, when passed, were extremely fetid, black, and slimy, but giving off no smell of turpentine. Hertwig injected two drachms into the veins of a horse; trembling, reeling, with inclination to pass stools, and frequent micturition ensued. Fever and bronchitis were set up, and the animal died in nine days. Schubert found that two drachms, given to a dog, caused tetanus and death in three minutes. I once saw half a drachm administered to a young cat: the poor creature mewed piteously, was extremely restless for several hours, and had constant micturition, unaccompanied with diarrhoea; after some hours, it fell into a profound lethargy, from which it awoke perfectly well; its eyes remained injected for several days.

"Turpentine seems peculiarly destructive to vegetable existence. Small insects are speedily destroyed by it; indeed, no other drug appears to exert so fatal an influence over the majority of parasites which infest animal and vegetable life.

"When taken internally, it has been detected in the various secretions of the human body. Todd and Johnson have met with it in the kidneys of a patient who died from hemorrhage; it has also been detected in the chyle of a dog and horse, to which it had previously been administered, by Tiedemann and Gmelin."

12. *On the Relative Potency of Chloroform and Ether, and on some Dangerous Effects of Chloroform.* By JOHN SNOW, M. D.—Chloroform is much more powerful than ether, and this is one reason why it is in some respects more convenient. Its greater potency depends on its being more sparingly soluble in the blood than ether. The quantity of chloroform required to induce insensibility is less than one-tenth as much by measure, as in the case of ether. Viewed in this manner, it is more than ten times as strong; but to ascertain

their comparative physiological power, when inhaled in a similar manner, their volatility requires to be taken into account. In order to perceive the relative strength of these two medicines, we may suppose that the air which a patient breathes is saturated at 60 deg.—the ordinary temperature of a dwelling-room—with one or other of the vapours, and see how much air he would have to breathe in either case, in order to be narcotized to the third degree—the extent of insensibility usually required in a surgical operation. Thirty-six minims is about the average quantity of chloroform required to produce this degree of narcotism in the adult, and this would saturate 257 cubic inches of air at 60 deg., making it expand to nearly 300 cubic inches, which would be breathed in twelve ordinary respirations of 25 cubic inches each. The quantity of ether usually required to produce the same amount of insensibility in the adult is about  $7\frac{1}{2}$  fluidrachms; this would saturate 440 cubic inches of air at 60 deg., and increase its volume to rather more than 800 cubic inches, which would require thirty-two ordinary respirations to breathe it. We see, therefore, that twelve inspirations of air charged with vapour of chloroform are equal to thirty-two similar inspirations of air charged with vapour of ether, at the same temperature; and that consequently chloroform is nearly three times as strong as ether. In actual practice, the difference in strength is generally greater than this, for ether abstracts much more caloric than chloroform during its evaporation, thereby reducing the temperature of the air passing over it, and the sponge or whatever contains it, and limiting its own evaporation in a greater degree. It follows, therefore, that the fact of accidents not occurring under the use of ether, could be no guarantee that they would not happen during the employment of chloroform.

When an animal after it has become completely insensible, is allowed to continue breathing air charged with the vapour, the respiration shortly ceases; but if the air do not contain more than about five per cent. of the vapour, the heart continues to pulsate for some time after the breathing has ceased, and the circulation is finally arrested for want of the respiration, as in all other cases when death takes place by apnoea. I have heard the pulsations of the heart by means of the stethoscope several times for one or two minutes after the breathing has ceased, in cats and rabbits under the influence of chloroform. During this interval, life is easily recalled by means of artificial respiration; indeed, more than once, moving the animal, or pressing on its chest, whilst using the stethoscope, has apparently been the means of resuscitating it. This persistence of the heart's action, as I have elsewhere shown, does not arise from any incapacity of chloroform to paralyze it, but from the circumstance that the sensibility of that part of the nervous system on which the motions of respiration depend, is abolished by a somewhat smaller quantity of the narcotic than is requisite to suspend the action of the heart. When, however, an animal is made to breathe air containing a greater quantity of the vapour, ten per cent. or upwards, death takes place rapidly in from half a minute to about two minutes, and the respiration and circulation cease about the same time. The reason of this is, that there is sufficient vapour in the lungs, at the moment when the breathing stops, to paralyze the action of the heart as soon as it is absorbed and added to that already contained in the blood. Under these circumstances, it is evident that artificial respiration can be of no avail; and this is the manner in which there is every reason to believe the greater number of the fatal cases of inhalation of chloroform have occurred.

Sometimes a patient begins all at once to breathe deeply during the inhalation; and under these circumstances, if the vapour be not largely diluted, it will be inspired with dangerous rapidity. The first incision by the surgeon's knife, when the patient is unconscious, but not totally insensible, sometimes has the effect of causing him to draw a deep inspiration, and to hold his breath at the end of it, retaining the air in his lungs; now an inspiration of this kind might, on a moderate computation, introduce 100 cubic inches of air; and if this were charged with vapour of chloroform, by passing over a handkerchief or sponge, it might contain ten or twelve minims; if the air or the handkerchief were warm, it might, indeed, contain much more; but this quantity added to that already in the circulation might cause a fatal accident.



It must be sufficiently evident from these considerations that unless some means were used for regulating the strength of the vapour, fatal accidents would be liable to occur from the employment of chloroform. Unfortunately, Dr. Simpson, to whom we are indebted for its introduction, recommended it to be used on a handkerchief, and even held it out as one of the advantages of the new anæsthetic, that it did not require any apparatus. This advice, coming from so high a quarter, could not fail to meet with numerous followers; and to this circumstance many of the accidents that have occurred must, in my opinion, be partly attributed.—*Dublin Medical Press*, April 10th, 1850, from *Edinburgh Medical and Surgical Journal*.

13. *Adulteration of Muriate of Morphia.* By MORSON, of London.—In my note, published in the last number of your journal, I stated that salicine was the substance used in the recently detected adulterations of muriate of morphia. I had come to that conclusion from a hasty examination of the adulterated salt, relying principally on the oil of vitriol test; but a more careful examination to which I was subsequently led by the supposition that a manufacturer, disposed to adulterate, would employ a less costly article than salicine, has convinced me I was in error, and that sugar was really the substance employed. This correction, although unimportant in a commercial point of view, calls for a few remarks with reference to the detection of sugar under such circumstances. The perfect similarity in colour of the reaction of oil of vitriol on the salt containing sugar, as compared with that produced when salicine is present, renders this test unavailing as a means of distinguishing the two substances named when mixed with the morphia salt; nor is it easy to detect the sugar by its taste, in the mother-liquor resulting from the decomposition of the salt by ammonia, as the presence of a little muriate of ammonia completely masks the sweet flavour. This latter salt probably also affects the process of fermentation in estimating the sugar in that way, for it was found that the alcohol obtained from a specimen of the adulterated salt represented a little more than half the quantity of sugar presumed to be present. On the other hand, the detection of salicine offers no difficulty. It is simply necessary to precipitate a solution of the suspected salt in four times its weight of water at a boiling temperature, with very slight excess of ammonia, to filter while hot, and to concentrate the filtrate, when the salicine will crystallize out, being sparingly soluble in cold water. The adulterated salt has been in the London market for more than twelve months, although its real character was not known, and I have ascertained that several hundred ounces of it have been recently sold.—*Mr. Morson, of Southampton Row, Russell Square, in Pharm. Journ.*

Here is another exposure of the chemical frauds, respecting which we have already had occasion to caution our readers. The preparations which are now the subjects of these frauds demand the most scrupulous care and accuracy, both in the manufacture and in the administration; and when we consider the alarming and fatal consequences likely to ensue from the circulation in the trade of fabricated articles of this description, we think no apology is required for bringing the subject prominently forward. Let us consider, for a moment, the probable result of the adulteration of a morphia salt with fifty per cent. of sugar or other inert substance. The manufacturer sells his preparation at less than the prime cost of the genuine article: he either obliges the honest manufacturer to sell at a loss, or he drives him out of the market. The wholesale purchaser of the fabricated salt sells it to the retail chemist, who supplies it to his customers. A patient finds that the desired effect is not produced, and he increases the dose until relief is obtained. He procures a supply at another shop where the preparation is genuine, and consequently double the strength; he takes the same quantity, which produces an alarming effect. We have known many instances in which patients have been nearly poisoned in this way, not only with opium and its preparations, but also with prussic acid, extract of colocynth, and other powerful medicines.—*Dublin Medical Press*, Feb. 27, 1850, from *Pharm. Journ.*